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in Puerto Rico

Place:

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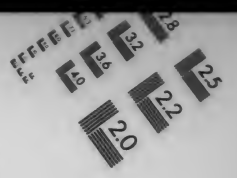
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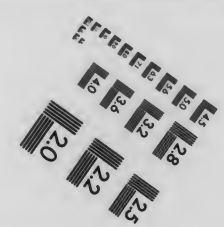
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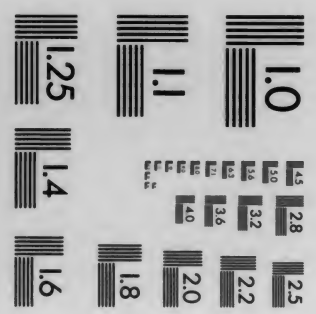
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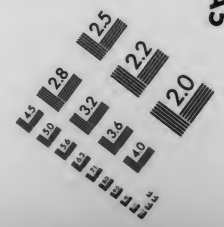
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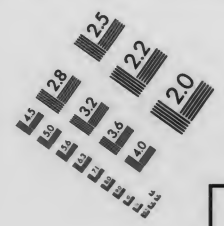
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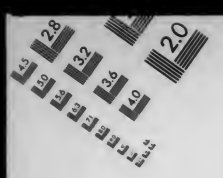
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INDUSTRIAL ALCOHOL INDUSTRY IN PUERTO  
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## FOREWORD

On February 11, 1944, the Administrator of the Wage and Hour Division, pursuant to the provisions of the Fair Labor Standards Act of 1938 as amended, appointed Special Industry Committee No. 3 for Puerto Rico. It is the duty of this Committee to investigate the economic and competitive conditions in the various industries in Puerto Rico and in each industry to recommend to the Administrator the highest minimum wage which it determines will not substantially curtail employment in the industry. The Act further directs that the Committee shall not recommend a minimum wage rate which will give any industry in Puerto Rico a competitive advantage over any industry in the United States outside of Puerto Rico and the Virgin Islands.

The statistical and other economic data given in the present report have been assembled for the purpose of assisting the Committee in the performance of its statutory functions in connection with the Puerto Rican Industrial Alcohol Industry. This study does not, however, purport to be a complete economic study of the industry, but contains only such currently available information as is believed to be of interest to the Committee in its investigation of the industry's economic and competitive conditions.

The report was prepared by Manuel Cambouri and Henry Winthrop, under the general supervision of Verl E. Roberts, Chief, Minimum Wage Studies Section.

Harry Weiss, Director  
Economics Branch

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A. GENERAL INFORMATION ON THE INDUSTRY

1. Size and Location

There are three plants in the industry, as follows: Puerto Rico Distilling Company, Destileria Serralles and Asociacion Azucarera Cooperative Lafayette. The first is located at Arecibo, the second at Ponce, and the third at Arroyo. The first two manufacture industrial alcohol (ethyl 1/ and denatured alcohol 2/) 3/ and the third, butyl alcohol, acetone and ethyl alcohol in the current ratios of 60, 38 and 2 percent respectively. 4/ For the purpose of this report, it is assumed that the manufacture of butyl alcohol and acetone is to be included within the scope of the Industrial Alcohol Industry.

A survey made by the Wage and Hour and Public Contracts Divisions shows that as of October 1943 the three plants combined employed a total of 268 workers.

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1/ Alcohol of 160 degrees proof or more.

2/ Ethyl alcohol of 160 degrees proof or more to which has been added such denaturing materials as will render the alcohol unfit for use as an intoxicating beverage; it is tax-free and is intended for use solely in the arts and industries. Denatured alcohol includes completely denatured and specially denatured alcohol. Completely denatured alcohol is ethyl alcohol treated with various substances, according to formula, and after denaturation it may be sold and used within certain limitations without permit and bond. Specially denatured alcohol is ethyl alcohol so treated with denaturants as to permit its use in a greater number of specialized arts and industries than is possible in the case of completely denatured alcohol. Its character is such that it may be sold, possessed and used only under a basic permit and bond, unless otherwise provided by Federal regulation.

3/ Industrial alcohol has many uses. It is used in making artificial silk, lacquers, imitation leather, shellac and varnish, toilet preparations and perfumes, chemicals, synthetic rubber, dyes, medicinals and drugs, plastics, explosives, anti-freeze solution, etc.

4/ According to the Annual Report of the Puerto Rican Reconstruction Administration for the year June 30, 1940, the Lafayette plant was built with a loan of \$550,000 from the Puerto Rican Reconstruction Administration to provide facilities for experimenting with the conversion of cane by-products into solvents such as butyl alcohol and acetone. The plant has a capacity for converting annually 2,500,000 gallons of molasses into 5,000,000 pounds of mixed solvents.

## 2. Seasonality

There are no well defined seasonal patterns in either the ethyl alcohol or the specially denatured alcohol branch of the Industry. Months of high and low production in either branch vary from year to year (Table 1). In addition, there are months in which the production of ethyl alcohol is at complete standstill. Such information as is available indicates that practically all completely denatured alcohol is denatured during the last four months of the year.

## 3. Raw Materials

The principal raw material used by the Industry is molasses, a by-product of the local sugar industry. Table 2 shows the consumption of molasses by the Industrial Alcohol Industry from 1936 to 1941. According to this table such consumption has varied from a high of 5,673,000 gallons in 1940 to a low of 3,749,000 gallons in 1941. The former figure represented 14.1 percent and the latter 7.6 percent of the total quantity of molasses produced on the Island in those years.

There are no regularly published price quotations on molasses sold on the Island. However, testimony at a Congressional hearing on economic conditions in Puerto Rico held during the latter part of 1943 was to the effect that prior to the war local prices of Puerto Rican molasses were about 3 cents per gallon. <sup>1/</sup> Since then the price of molasses has increased considerably, the present OPA ceiling price in Puerto Rico being 13.6 cents per gallon. By contrast, the present total cost of molasses delivered to a Mainland producer is estimated at about 18 cents a gallon.

Normally, the bulk of molasses produced on the Island is shipped to the Mainland. However, owing partly to a shortage of shipping and partly to disagreement of local sellers and United States government purchase agencies as to the price to be paid for molasses, stocks of molasses on the Island since our entrance into the war have been abnormally high.

## B. COLLECTIVE AGREEMENTS AND UNION WAGES

There are two labor unions with collective agreements in the industry as follows: Liquor Industry Workers Union of Ponce and Liquor Industry Workers Union of Arecibo. The former is affiliated with the Free Federation of Workers of Puerto Rico, a branch of the American Federation of Labor and the latter with the General Confederation of Workers of Puerto Rico. The agreement of the Ponce Union is with the Destileria Serralles, Inc. and that of the Arecibo Union with the Puerto Rico Distilling Company.

<sup>1/</sup> Hearings before the Subcommittee of the Committee on Insular Affairs, House of Representatives, Seventy-Eighth Congress, First Session pursuant to F. Res. 159, Part 14, Investigation of Political, Economic and Social Conditions in Puerto Rico.

Table 1. Industrial Alcohol Industry in Puerto Rico: Monthly production index of ethyl alcohol and of completely and specially denatured alcohol for two peacetime years 1938 and 1939 and two wartime years 1941 and 1942 (peak month = 100)

	1938 percent	1939 percent	1942 percent	1943 percent
		<u>Ethyl alcohol</u>		
January	33.7	52.8	0.0	0.0
February	100.0	55.6	57.6	0.0
March	32.2	33.1	100.0	26.1
April	0.0	0.0	98.9	90.8
May	2.9	33.4	76.0	70.4
June	68.7	78.7	0.0	95.6
July	54.7	58.2	0.0	0.0
August	49.5	4.5	0.0	100.0
September	45.1	28.3	18.9	a/
October	33.1	100.0	66.3	a/
November	18.9	40.0	0.0	a/
December	46.2	16.4	0.0	a/
		<u>Completely denatured alcohol b/</u>		
January	0.0	0.0	-	-
February	0.0	0.0	-	-
March	0.0	0.0	-	-
April	0.0	0.0	-	-
May	1.3	0.0	-	-
June	0.0	0.0	-	-
July	0.0	0.0	-	-
August	0.0	0.0	-	-
September	100.0	11.7	-	-
October	26.3	100.0	-	-
November	0.0	0.0	-	-
December	27.3	0.0	-	-
		<u>Specially denatured alcohol</u>		
January	22.3	53.3	27.4	8.2
February	21.6	56.9	62.2	30.8
March	63.2	48.1	87.3	24.6
April	37.8	56.5	100.0	62.2
May	42.1	25.9	40.1	92.9
June	32.7	25.5	2.4	52.0
July	18.4	57.2	28.3	32.1
August	38.4	25.3	4.7	100.0
September	31.7	77.2	38.2	67.2
October	100.0	100.0	15.6	a/
November	4.0	43.7	15.1	a/
December	28.5	88.2	22.4	a/

Source: Basic Data: Federal Alcohol Tax Unit in New York City

a/ No data available.

b/ No data of monthly production available for 1942 and 1943.



Table 2. Industrial Alcohol Industry in Puerto Rico:  
 Molasses produced in Puerto Rico and molasses used  
 in the production of ethyl alcohol, 1936 - 1941 a/

Year	Molasses produced in Puerto Rico <u>b/</u> (1000 gallons)	Molasses used by the alcohol industry <u>c/</u> (1000 gallons)	Ratio of molasses consumed in the manufacture of alcohol to total molasses produced (percent)	Price of molasses per gallon <u>d/</u> (cents)
1936	41,990	5,260	12.5	8
1937	46,564	5,177	11.1	7
1938	34,511	5,456	15.8	7
1939	44,156	5,658	12.8	6
1940	40,276	5,673	14.1	7
1941	49,500	3,749	7.6	-- <u>e/</u>

Source: United States Treasury Department, Annual Reports of the Commissioner of Internal Revenue, United States Department of Agriculture, Bureau of Agricultural Economics, The World Sugar Situation, September 1943; and Hearings before the Subcommittee of the Committee on Insular Affairs

a/ No data available for years later than 1941.

b/ Calendar years.

c/ Fiscal years ending June 30.

d/ Price quoted is f.o.b. New York and other Atlantic ports. For the period covered the freight was less than one cent a gallon.

e/ In 1941 the price of molasses started at seven cents a gallon and reached 12.5 cents before the year was over.

Table 3 shows the minimum hourly wage rates provided in the two agreements referred to above. According to this table, minimum hourly wage rates in the Destileria Serralles, Inc. range from a low of 35 cents per hour for general workers employed in the delivery, warehousing, bottling and barreling departments to a high of 45 cents an hour for stillmen. The agreement with the Puerto Rico Distilling Company provides for two sets of minimum wage rates, depending on seasonal activity. During the active season, the minimum wage rates range from a low of 35 cents per hour for truck laborers and field personnel to a high of 50 cents per hour for stillmen and solderers; during the "dead" season, there are in effect only two minimum hourly wage rates - 40 and 45 cents. The former applies to general repair and "other workers" and the latter to assistant mechanics, carpenters, masons and painters.

### C. PRODUCTION CONSUMPTION AND MARKETS

#### 1. Production and Consumption

##### a. Ethyl alcohol

Production of ethyl alcohol, which from 1935-36 to 1939-40 amounted to over four million proof gallons, dropped sharply to 2,571,864 proof gallons in 1940-41, 1,846,159 proof gallons in 1941-42, and 1,540,820 proof gallons in 1942-43 (Table 4). <sup>1/</sup> An important factor accounting for the decline has been the increased demand in continental United States for Puerto Rican rum as a result of which there has been a substantial shift in production from industrial alcohol to rum, a shift made easier by the fact that there is no WPB restriction on the island on the use of molasses for the manufacture of rum.

Normally, about 80 percent of the total quantity of ethyl alcohol produced on the Island is denatured; the rest is chiefly used for beverage purposes, exported or sold for medicinal, hospital or scientific use (Table 5).

##### b. Denatured alcohol

Production of completely denatured alcohol declined steadily from 1,107,024 wine gallons in 1935-36 to 28,440 wine gallons in 1942-43 (Table 6). On the other hand, production of specially denatured alcohol increased steadily from 772,217 wine gallons in 1935-36 to 1,578,805 wine gallons in 1939-40 and then declined steadily to 240,936 wine gallons in 1942-43. So far as data are available the trend of withdrawals from bonded warehouses of both types of alcohol have more or less paralleled the trend in production.

Practically all specially denatured alcohol produced on the Island is consumed locally in the manufacture of toilet preparations.

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<sup>1/</sup> Puerto Rican sugar mills are expected to produce about 50,000,000 gallons of molasses during the 1943-44 crop year. Of this total 5,000,000 gallons have been tentatively allocated to the production of industrial alcohol in Puerto Rico, which quantity would yield approximately 2,000,000 gallons of industrial alcohol.



Table 3. Industrial Alcohol Industry in Puerto Rico: Minimum wage rates provided in collective agreements presently in effect in the industry

Occupation	Minimum hourly wage rates (cents)
A. <u>Collective agreement between the Liquor Industry Workers Union of Ponce and Destileria Serrales, Inc.</u>	
Stillmen	.45
Mashmen	.42
General workers in delivery, warehousing, bottling and barreling departments	.35
B. <u>Collective agreement between the Liquor Industry Workers Union of Arecibo and the Puerto Rico Distilling Company</u>	
a. <u>Active season</u>	
Truck laborers, field personnel	.35
Condenser attendants, delivery men, tank cleaners, night watchmen, shipping employees	.40
Employees in fermentation, blending, boiler, electric plant and shop departments; truck drivers	.45
Stillmen, solderers	.50
b. <u>Dead season</u>	
General repair and other workers	.40
Two assistant mechanics, carpenters, masons, painters	.45

Source: Collective agreements between Unions and Companies specified above

Table 4. Industrial Alcohol Industry in Puerto Rico: Number of plants manufacturing ethyl alcohol, number of ethyl alcohol bonded warehouses, production, warehouse losses and stocks of ethyl alcohol remaining in bonded warehouses, 1935-36 to 1942-43

(Quantities in proof gallons)

Year	Number of plants operated a/	Number of warehouses operated	Production	Withdrawals	Ware-houses losses	Remaining in bonded ware-house June 30
1935-36	2	2	4,745,553	4,014,140	14,298	906,398
1936-37	2	2	4,128,285	4,418,421	12,744	601,263
1937-38	2	2	4,336,935	4,004,917	16,918	916,802
1938-39	2	2	4,319,994	4,225,693	12,449	1,024,190
1939-40	3	3	4,142,705	4,150,328	20,527	996,499
1940-41	3	3	2,571,864	3,067,636	13,365	490,853
1941-42	3	3	1,846,159	b/	b/	b/
1942-43	3	3	1,540,820	b/	b/	b/

Source: 1936-41; United States Treasury Department, Annual Report of the Commissioner of Internal Revenue; 1942 and 1943; Federal Alcohol Tax Unit at San Juan

a/ Number operated during any part of the year.

b/ No data available.

Table 5. Industrial Alcohol Industry in Puerto Rico: Various purposes for which ethyl alcohol was withdrawn from bonded warehouses, 1935-36 to 1940-41 a/

(Quantities in proof gallons) b/

Year	Total	For denatura- tion	For hospital and scientific use	For medicinal use	For indus- trial use	For bever- age pur- poses	For export
1935-36	4,014,140	3,207,065	516	28,454	—	684,720	93,385
1936-37	4,418,421	3,643,804	1,026	34,928 <u>c/</u>	504	—	136,515
1937-38	4,004,917	3,220,102	249	32,471	2,290	635,795	114,010
1938-39	4,225,693	3,373,078	850	32,984	765	714,336	103,680
1939-40	4,150,328	3,330,768	951	39,164	932	659,931	118,582
1940-41	3,067,636	2,266,248	1,134	45,669	3,706	476,182	274,697
Average for the period	3,980,189	3,173,511	788	35,612	1,639	634,192	140,145
Percent for the period	100.0	79.7	<u>d/</u>	.9	<u>d/</u>	15.9	3.5

Source: United States Treasury Department, Annual Report of the Commissioner of Internal Revenue for the fiscal years 1936-41

a/ No data available for years later than 1941; all data shown in table represent tax-free withdrawals; during the period covered by the table there were no tax-paid withdrawals of ethyl alcohol.

b/ A proof gallon is a gallon (231 cubic inches at 60° F.) of alcohol-water solution containing 50% by volume of alcohol, and, by definition, this solution is called "100-proof".

c/ For physicians' prescriptions.

d/ Less than five-hundredths of one percent.

Table 6. Industrial Alcohol Industry in Puerto Rico:  
Number of denaturing plants, amount of denatured  
alcohol produced and withdrawn and stock on hand,  
1935-36 to 1942-43 a/

(Quantities in wine gallons)

Year	Number of plants operated <u>b/</u>	Completely denatured			Specially denatured		
		Production	With- drawals	On hand June 30	Production	With- drawals	On hand June 30
1935-36	2	1,107,024	971,697	135,860	772,217	779,249	6,616
1936-37	2	836,630	973,638	452	947,556	948,030	5,215
1937-38	2	557,564	553,202	486	1,515,378	1,478,171	41,922
1938-39	2	458,014	455,868	486	1,322,189	1,338,617	24,947
1939-40	2	284,171	281,664	3,007	1,578,805	1,594,473	8,871
1940-41	2	249,805	251,586	540	1,046,173	1,031,614	22,847
1941-42	2	30,857	<u>c/</u>	<u>c/</u>	518,228	<u>c/</u>	<u>c/</u>
1942-43	2	28,440	<u>c/</u>	<u>c/</u>	240,936	<u>c/</u>	<u>c/</u>

Source: 1936-41: United States Treasury Department, Annual Report of the  
Commissioner of Internal Revenue, 1942-43: Federal Alcohol Tax  
Unit at San Juan

a/ Included in denatured alcohol are tax gallons of rum and tax gallons  
of other spirits transferred from distilleries for denaturation.  
These were not reported in wine gallons.

b/ Number operated during any part of the year.

c/ No data available.

## 2. Exports and Export Prices

Shipments of both pure and denatured alcohol to the Mainland have increased almost steadily from 350,803 gallons valued at \$147,100 in 1923-24 to 2,047,970 gallons valued at \$507,281 in 1937-38 (Table 7). During the next three years, such shipments have varied from a low of 1,463,574 gallons, valued at \$392,313 in 1940-41 to a high of 1,854,206 gallons, valued at \$516,943 in 1939-40. In 1941-42 and 1942-43 shipments of alcohol from Puerto Rico to the Mainland showed further declines.

The unit price of alcohol shipped to the Mainland during the period 1923-24 to 1940-41 showed a fluctuating decline from a high of over 40 cents per gallon during the period 1923-26 to less than 30 cents per gallon since 1936-37. However, the data available on quantity and value of shipments of industrial alcohol from Puerto Rico to the Mainland for the calendar years 1942 and 1943 indicate that prices in these two years were considerably in excess of those prevailing in any of the previous years cited above.

Normally Puerto Rico does not export to foreign countries either pure or denatured alcohol.

## 3. Continental United States Market

Consumption of ethyl alcohol in the United States increased greatly since the outbreak of the war from 105,900,000 wine gallons in 1935-36 and 116,000,000 wine gallons in 1936-37 to 254,100,000 wine gallons in 1941-42 (Table 8). Estimates are to the effect that the consumption of this product in the United States during 1942-43 and 1943-44 will reach 272,100,000 wine gallons and 550,000,000 wine gallons respectively. Practically all ethyl alcohol consumed in the United States is of domestic origin.

Until recently, the bulk of ethyl alcohol produced in the United States was made from molasses. However, in 1943, the situation was largely reversed owing to the heavily expanded production of grain alcohol to meet war needs. The bulk of the output now consists of grain alcohol -- a situation which is expected to continue through 1944.

### TRANSPORTATION AND INSURANCE COSTS

The principal cost items involved in the transportation of alcohol from Puerto Rico to continental United States are freight and insurance, both of which have risen since the war. Since September 1941 the freight charge for denatured alcohol in tins from Ponce and San Juan, Puerto Rico, to New York City has been 12 cents per cubic foot. At present there are two distinct types of insurance applying to shipments from Puerto Rico to continental United States, as follows:

#### 1. Ordinary Marine Insurance

The rates for this type of insurance vary from 30 cents to approximately \$2.00 per \$100.00 valuation, depending on such factors as method of shipment and type of boat.

Table 7. Industrial Alcohol Industry in Puerto Rico: Shipments of alcohol from Puerto Rico to the United States, 1923-24 to 1940-41 a/

Fiscal year	Quantity (gallons)	Value (dollars)	Average value per shipped gallon (dollars)
1923-24	350,803	147,100	.419
1924-25	561,324	254,619	.453
1925-26	418,586	186,320	.445
1926-27	438,611	158,306	.360
1927-28	742,518	332,608	.447
1928-29	906,846	326,026	.359
1929-30	886,558	368,376	.415
1930-31	880,319	333,539	.378
1931-32	1,021,330	271,716	.266
1932-33	1,170,549	350,596	.299
1933-34	1,143,199	316,954	.277
1934-35	1,011,028	322,769	.319
1935-36	1,573,723	507,296	.322
1936-37	1,736,825	559,491	.322
1937-38	2,047,970	507,281	.247
1938-39	1,527,272	393,504	.257
1939-40	1,854,206	516,943	.278
1940-41	1,463,574	392,313	.268

Source: Government of Puerto Rico, Department of Agriculture and Commerce, Annual Book on Statistics, Fiscal year 1940-41

a/ Includes pure and denatured alcohol.



Table 8. Production and consumption of ethyl alcohol in the United States, 1935-36 to 1943-44

(in millions of wine gallons, 190-proof)

Year	Production	Consumption
1935-36	104.1	105.9
1936-37	124.5	116.0
1939-40	137.4	140.9
1940-41	169.2	170.2
1941-42	260.3	254.1
1942-43	370.1 <u>a/</u>	272.1 <u>a/</u>
1943-44	505.0 <u>a/</u>	550.0 <u>a/</u>

Source: "Industrial Alcohol for War and Postwar." Chemical and Metallurgical Engineering, August, 1943

a/ Estimated.

Since the outbreak of the war a surcharge, ranging from about 20 cents to 50 cents per \$100.00 valuation, is added to the above charges of ordinary marine insurance to cover some of the hazards indirectly due to war.

## 2. War Risk Insurance

Prior to August 1942 the rate for this type of insurance fluctuated from a low of  $7\frac{1}{2}$  cents per \$100.00 valuation during late 1939 to \$5.00 per \$100.00 valuation in June 1942. However, as of August 1, 1942 the OPA fixed the maximum premium for this type of insurance at 75 cents per \$100.00 valuation.

## E. PRICES AND PRICE CONTROL

The price of industrial alcohol sold within Puerto Rico is regulated by the OPA General Maximum Price Regulation (GMPR). However, this regulation was modified with respect to Puerto Rico and the Virgin Islands by Supplementary Regulation 13 to the extent that sellers in these territories may determine ceiling prices by using as base the period from April 10 to May 10, 1942 instead of March 1942 as provided in GMPR. Supplementary Regulation 13 became effective June 26, 1942.

The price of Puerto Rican industrial alcohol sold for consumption in continental United States is regulated by OPA Maximum Import Price Regulation (MIPR). Under this regulation, an importer is allowed to charge a price no higher than his March 1942 price for the same commodity plus any addition in the "landed costs" of the materials sold, "landed costs" being defined to include: "the price charged by the foreign seller plus all the costs, charges, and expenses, including any customs duties or import taxes, and purchasing commissions incurred by the importer in transporting the industrial materials from the point of shipment abroad to the point in the continental United States designated by the importer prior to importation for delivery". However, there is no ceiling on prices of industrial alcohol if the alcohol is sold to United States Government agencies or Government contractors or sub-contractors under certain specified conditions.

## F. EFFECTS OF VARIOUS POSSIBLE MINIMUM HOURLY WAGE RATES <sup>1/</sup>

### 1. Number and Percent of Workers Who Would be Directly Affected

Table 9 and 10 show the number and percentage of workers in the industry who would have been directly affected from the establishment of various minimum hourly wage rates as of August-October 1943. According to these tables, a 33-cent minimum hourly wage rate would have directly affected 5 workers or 1.9 percent of the total; a 36 cent minimum hourly wage rate, 167 workers or 62.3 percent of the total; and a 40 cent minimum hourly wage rate, 175 workers, or 65.3 percent of the total. <sup>2/</sup>

<sup>1/</sup> Until such time as a wage order is issued for this industry by the Administrator, the minimum wage effective under the Fair Labor Standards Act is 30 cents an hour.

<sup>2/</sup> The rates used in the above discussion are merely for illustrative purposes and not for the purpose of suggesting to the Committee what rate it should recommend.



Table 9. Industrial Alcohol Industry in Puerto Rico: Distribution of workers according to average hourly earnings, August - October 1943

Average hourly earnings (cents)	Number of employees	Percent	
		Simple	Cumulative
Less than 30.0	1	.4	.4
Exactly 30.0	3	1.1	1.5
30.1 - 30.9	-	-	1.5
31.0 - 31.9	1	.4	1.9
32.0 - 32.9	-	-	1.9
33.0 - 33.9	80	29.8	31.7
34.0 - 34.9	3	1.1	32.8
35.0 - 35.9	79	29.5	62.3
36.0 - 36.9	1	.4	62.7
37.0 - 37.9	7	2.6	65.3
38.0 - 38.9	-	-	65.3
39.0 - 39.9	-	-	65.3
40.0 and over	93	34.7	100.0
Number of employees	268		
Number of Establishments	3		
Average hourly earnings	39.87		

Source: Survey made by the San Juan office of the Wage and Hour and Public Contracts Divisions

Table 10. Industrial Alcohol Industry in Puerto Rico: Estimated number and percent of workers who would have been directly affected by the establishment of specified minimum hourly wage rates as of August - October, 1943

Minimum hourly wage rate	Number of workers affected	Percent
0.31	4	1.5
0.32	5	1.9
0.33	5	1.9
0.34	85	31.7
0.35	88	32.8
0.36	167	62.3
0.37	168	62.7
0.38	175	65.3
0.39	175	65.3
0.40	175	65.3

Source: Survey made by the San Juan office of the Wage and Hour and Public Contracts Divisions

## 2. Effect on Wage Bill

Table 11 shows the percent increase in the wage bill of the industry which would have directly resulted from the establishment of various minimum hourly wage rates as of August-October 1943. According to this table, a 33 cent minimum hourly wage rate would have increased the industry's wage bill 0.2 percent; a 36 cent minimum hourly wage rate, 3.4 percent; and a 40 cent minimum hourly wage rate, 9.2 percent. <sup>1/</sup>

## 3. Effect on Total Production Costs

The direct effect of a given minimum hourly wage rate on the total production costs of an industry is determined by multiplying the percent increase in the wage bill of the industry resulting from the given minimum hourly wage rate by the ratio of labor costs to total production costs. Unfortunately, no reliable data are available on the relation between labor costs and total production costs in the industry. Under the circumstances, the best that can be done is to assume various possible ratios of labor costs to total production costs and base the calculation of effects on total production costs on such assumed ratios, leaving to the public hearing which will be held in connection with the Industry Committee meeting the question of eliciting information on the precise relation between labor costs and total production costs in the industry.

Table 12 shows such calculations for five hypothetical ratios, ranging from 2 percent to 10 percent. It will be noted that the percent increases in total production costs vary directly with the magnitude of the minimum hourly wage rates and assumed cost ratios. Thus, on the basis of a 6 percent ratio, a 35-cent minimum hourly wage rate would have increased total production costs 0.1 percent and a 40-cent minimum hourly wage rate, 0.6 percent; while on the basis of a 10 percent ratio, the same minimum hourly wage rates would have increased total production costs 0.2 percent and 0.9 percent, respectively.

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<sup>1/</sup> The above estimates do not make allowance for increases which might be granted to workers whose hourly earnings at the time the wage survey was made were equal to or greater than a specific minimum hourly wage rate. Under the Fair Labor Standards Act such increases are not mandatory but it should be recognized that higher minimum hourly wage rates may bring them about indirectly. In addition, the estimates do not make allowance for possible increases in labor productivity and reductions in labor turnover rates which may result from higher earnings. These and other factors may offset the increase in the wage bill to an extent that the unit labor cost may rise by less than is indicated by the estimated wage bill increases.

Table 11. Industrial Alcohol Industry in Puerto Rico: Estimated percent increase in wage bills which would have directly resulted from the establishment of specified minimum hourly wage rates, as of August - October, 1943

Minimum hourly wage rate (cents)	Estimated percent increase in wage bill
0.31	.1
0.32	.1
0.33	.2
0.34	1.5
0.35	2.1
0.36	3.4
0.37	4.8
0.38	6.2
0.39	7.7
0.40	9.2

Source: Survey made by the San Juan Office of the Wage and Hour and Public Contracts Divisions

Table 12. Industrial Alcohol Industry in Puerto Rico: Estimated percentage increase in total production costs which would have resulted from the establishment of specified minimum hourly wage rates as of August - October, 1943

Minimum hourly wage rate (cents)	Percent increase in total production costs when ratio of labor cost to total production cost is assumed to be				
	2.0 percent	4.0 percent	6.0 percent	8.0 percent	10.0 percent
31	<u>a/</u>	<u>a/</u>	<u>a/</u>	<u>a/</u>	<u>a/</u>
32	<u>a/</u>	<u>a/</u>	<u>a/</u>	<u>a/</u>	<u>a/</u>
33	<u>a/</u>	<u>a/</u>	<u>a/</u>	<u>a/</u>	<u>a/</u>
34	<u>a/</u>	.1	.1	.1	.2
35	<u>a/</u>	.1	.1	.2	.2
36	.1	.1	.2	.3	.3
37	.1	.2	.3	.4	.5
38	.1	.2	.4	.5	.6
39	.2	.3	.5	.6	.8
40	.2	.4	.6	.7	.9

Source: Basic data: Survey made by the San Juan office of the Wage and Hour and Public Contracts Division

a/ Less than one twentieth of one percent.

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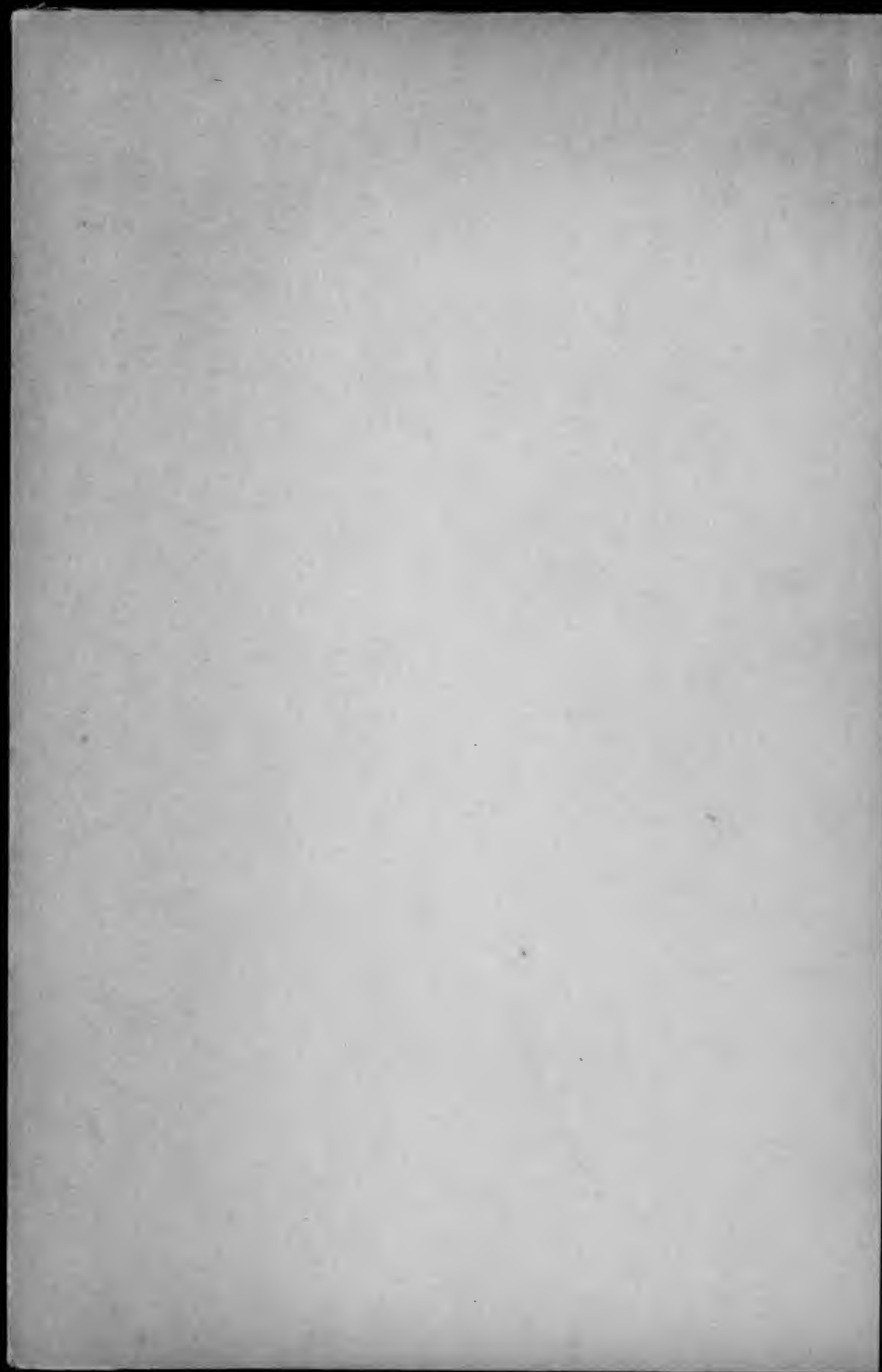
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